AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

1.   (Currently amended) A ~~computer-implemented~~ method for identifying ~~a data component in a~~ trie data in a trie based on multiple tags, the trie including a header section containing a tag information field and a node section containing a plurality of nodes, each node containing a tag bit, the method comprising:

        receiving an input;

        determining a first value of the tag information field in the header;

        based on the first value, determining a second value of a tag bit in a node of the node section, the node corresponding to the input;

        based on the first value and the second value, identifying whether a tag mask field is present in the node, the tag mask field including a plurality of bits in the node wherein at least one bit in the plurality of bits of the tag mask field is set;

        if the tag mask field is present, identifying at least one set ~~a tag~~ bit and a location of the at least one ~~in a node of the plurality of nodes, wherein a setting of the tag~~ set bit in the plurality of bits~~indicates a presence of a tag corresponding to the node~~ of the tag mask field;

        generating trie data ~~identifying a tag mask field within the node based on a setting of the tag bit, the tag mask field having a plurality of tag mask bits, wherein settings of the tag mask bits indicate a plurality of tags~~ corresponding to the node based on the identified at least one set bit in the plurality of bits of the tag mask field;

        ~~determining a data component in the trie based on the plurality of tags; and~~

        outputting the generated trie data ~~component~~.

2–18. (Canceled)

19.   (Currently amended) The method of claim 1 wherein determining the first value of the tag information field comprises identifying the first value as bit has a setting for indicating that the node contains multiple tagging presence of the tag mask field and determining the second value of the tag bit includes identifying the second value as indicating that the tag mask field is present in the node.

20.   (Canceled).

21.   (Currently amended) The method of claim 1 wherein the trie further header includes a value mask field header, the method further comprising:

comparing the header including at least one set bit with a bit in the value mask field in the header corresponding to the location of the at least one set bit in the tag mask field in the node;

based on the comparing, identifying a size of the value associated with the trie data, the step of outputting including outputting the identified for indicating a size of the value tag mask field.

22.   (Currently amended) The method of claim 1 21 wherein the number of bits in the value mask field and the number of bits in the tag mask trie further includes a header, the header comprising a tag information field are the same for interpreting the tag bit.

23.   (Currently amended) The method of claim 22 21 wherein the at least one set bit corresponds to a value associated with the trie data tag information field has a setting that indicates multiple tagging is present.

24. (Currently amended) The method of claim ~~23~~ 1 wherein the step of identifying ~~a~~ the tag mask field in the node further includes identifying presence of the tag mask field based on the setting of the ~~tag information field and the setting of the~~ tag bit.

25. (Canceled).

26. (Currently amended) The method of claim 24 wherein the ~~corresponding~~ generated trie data ~~component~~ is based on a pattern of values of the plurality of ~~tag mask~~ bits of the tag mask field.

27. (Currently amended) The method of claim ~~24~~ 26 wherein the ~~corresponding~~ generated trie data ~~component~~ includes a word in the trie.

28. (Currently amended) The method of claim ~~24~~ 23 wherein the header further includes a value array information field, the step of identifying a size of the value associated with the trie data including:

determining a value of the value array information field; and

setting ~~outputting~~ the size of the value associated with the trie ~~corresponding~~ data ~~component~~ equal to ~~includes outputting a word in~~ the value of the value array information ~~trie~~ ~~based on the pattern of values of the tag mask bits of the tag mask~~ field.

29-30. (Canceled)

31. (Currently amended) The method of claim ~~30~~ 28 further comprising identifying a value of the trie data corresponding to the at least one identified set bit, the step of

generating trie data comprising including the value of ~~wherein the header further includes a value size array field for indicating a size of the value associated with~~ the at least one value field in the trie data ~~tag mask bit~~.

32.   (Currently amended) The method of claim ~~30~~ 31 wherein the node further includes ~~a~~ at least one value field corresponding to the at least one bit, the identifying a value of the trie data corresponding to the at least one identified set bit including determining a value of the at least one value field of the node ~~having tag data associated with at least one tag mask bit, the method further including:~~

~~identifying a tag mask bit as having associated tag data based on a value of the tag value field; and~~

~~determining the tag data associated with the identified tag mask bit based on a value of the value mask field,~~

~~wherein outputting the corresponding data component includes outputting the associated tag data.~~

33.   (Currently amended) The method of claim 1 wherein the ~~trie further includes a~~ header ~~containing~~ contains a tag information field, the step of identifying the tag mask field including determining a presence of the tag mask field based on a value of the tag information field and a value of the tag bit.

34.   (Currently amended) The method of claim 33 further including determining a number of tags present in the trie based on the tag mask field by summing the number of one bits in the tag mask field of the node.

35.   (Currently amended) The method of claim 34 wherein determining the second value of the tag bit includes identifying ~~number of tags present in~~ the second value as

indicating that the tag mask field is not present in the node; and the step of identifying a tag mask field based on the first value and the second value includes identifying the absence of the tag mask field based on the first value and the second value, the second value being determined as being unset~~trie includes summing the number of one bits in the tag mask field of the node~~.

36.   (Previously presented) The method of claim 33 further including identifying additional information to add to the node by partial enumeration, the partial enumeration including:

counting each node in the plurality of nodes that are tagged;

generating an array of partial enumeration counts;

generating a map between a unique number and a tagged node based on the array.

37.   (Canceled)